

Ethics and Professional Responsibility Quiz

Read the article, “Space ethics and protection of the space environment,” by Mark Williamson in *Space Policy* 19 (2003) 47-52, and respond to the following questions. The article is available online in the ERAU library website. You may also have to consult another source to respond to Question 5.

1. Is the space environment more sensitive to human actions than the terrestrial environment? Explain.
 - The space environment is more sensitive to human actions than our terrestrial environment. On earth, we have several mechanisms that can alter how we affect our surroundings. We have weather, an ecosystem, living organisms, etc. In space, this is not the case. Once something is altered in space, it will most likely stay that way for a very long time. This paper gave the example of a geostationary orbit path being cluttered and rendered unusable for thousands of years.
2. What is the motivation behind considering formulation of a code of ethics for the use and exploration of the space environment?
 - The motivation that Williamson presents in this paper for the formulation of space ethics is quite simple: “To this end, space ethics can be summarized as ‘what we should and shouldn’t do in space.’” While this seems rather trivial, it is a good starting point for looking at how we impact the space environment now and how our future actions will continue to impact it. Williamson seems against the “laissez-faire” attitude of those who came before us, and implores us to look at the “should we” questions when viewing these types of issues.
3. What aspects should be considered in formulating a code of space ethics?
 - Some of the biggest aspects that should be considered when forming ethics like this. Williamson points to current environmental ethics and how we

have shifted our views on the environment significantly since the industrial revolution. Williamson also states that the ethics should examine “the impact of our actions in space on each other, on each other’s property, on the Earth, and on the space environment itself.”

4. Name three examples of the adverse effect of human exploration on the space environment.
 - a. Space debris clogging up orbits and posing risks for future missions
 - b. Impact debris on other planets
 - c. Micro-debris from satellite collisions
5. What is Kessler syndrome^{*}? Of the five examples of activities listed in Section 5, which ones are related to it? Explain.
 - Kessler syndrome is the exponential increase in satellite collisions due to previous satellite collision debris (taken from Wikipedia). The examples of adventure tourism in LEO and orbiting advertising would be examples of Kessler syndrome.
6. Why is it important that the space community spearhead the movement to establish a code of space ethics?
 - It is important that the space community spearheads the movement for this code of ethics because politics will become a factor in space in a very short period. We are entering a second “space race” right now. The privatization of space launches will transform the way that we handle spaceflight in the future. One idea would be to have the UN oversee space regulations and ethics codes to make the process as democratic as possible.

7. What should the ethical code for space address in general? Provide two specific examples.

- The ethical code for space above all, should protect people, terrestrial, and extraterrestrial environments. It should allow for the expansion of science and for exploration, but doing so responsibly. Some specific examples provided by Williamson are, “formation and enactment of a policy to maintain and expand the constituency of the body, specifically regarding its international nature,” and “formation and enactment of a policy to obtain funding and other support from key space-related organizations.”

8. If an advisory organization is formed for space ethics, what should it do to be successful?

- If there was an advisory board for space ethics, it should be as democratic as possible. This means including as many nations as possible since this will be a global issue. It should also have funding, and possibly officers as well to ensure the continuity and streamlining of any issues or policies that arise.